

ABSTRACT

TOPIC: PREDICTING THE AIRWAY CHANGES DURING THE COURSE OF PREGNANCY, LABOUR AND AFTER DELIVERY USING MALLAMPATI CLASSIFICATION AMONG INDIAN WOMEN.

INTRODUCTION :

Airway changes in pregnancy are of utmost importance to an Anaesthesiologist, when not assessed properly there can be difficulty in securing an airway for pregnant women.

As the primary cause of maternal mortality related to anaesthesia is failure in securing an airway, my study is about predicting the factors which cause airway changes.

Airway will be assessed by using SAMSOON AND YOUNG'S MODIFIED MALLAMPATI CLASSIFICATION OF AIRWAY, an universally accepted simple bedside test to estimate the difficulty of laryngoscopy and intubation. In this the visibility of oropharyngeal structures is correlated with difficulty in laryngoscopy.

It consists of 4 classes:

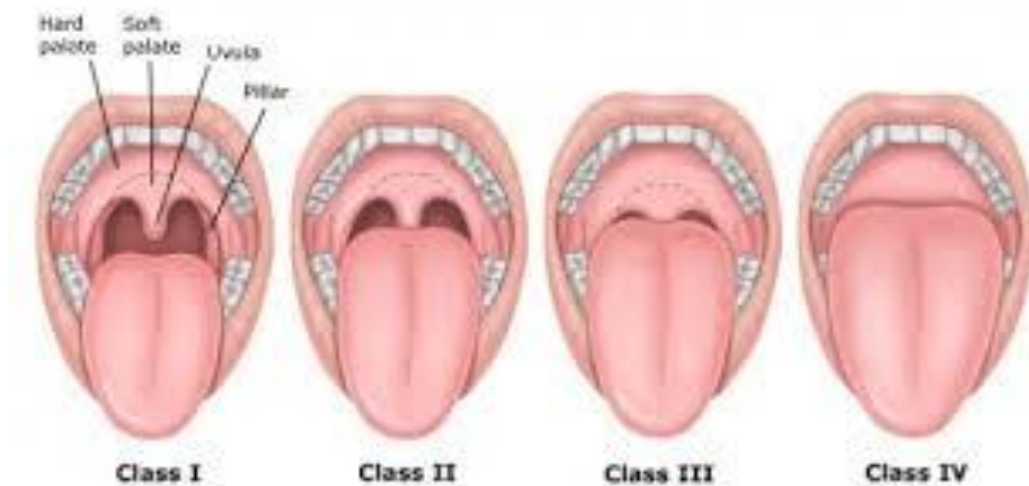
CLASS I : Soft palate, fauces, uvula and pillars are visualized.

CLASS II : Soft palate, fauces, pillars are visualized but uvula is masked by the base of the tongue.

CLASS III : Only the soft palate and base of uvula are observed.

CLASS IV : The soft palate is not visualized.

Presence of Class III and IV is associated with increased difficulty in laryngoscopy.



REVIEW OF LITERATURE:

1. Mallampati class changes during pregnancy, labour and after delivery, can these be predicted? In BRITISH JOURNAL OF ANAESTHESIA 2010 [104(1):67-70], which states it increases by 37% and factors such as BMI and duration of labour and amount of fluids given plays an important role in airway changes.
2. Increase in Mallampati classification during pregnancy , published in BRITISH JOURNAL OF ANAESTHESIA 1995 [74:638-642] , states an increase in airway difficulty by 34%.

3. Airway changes during pregnancy and labour, published in JOURNAL OF ANAESTHESIOLOGY 2008 [108:35762].It states an increase in airway changes by 38%.
4. Changing Mallampati during labour- a clinical report which states that 6 out of 7 women showed changes during course of labour. Published in Canadian journal of anaesthesiology.

AIMS AND OBJECTIVES :

- The main aim of this study is to measure the incidence of airway changes during the course of pregnancy, labour and after delivery and to predict the factors that are influential in causing these changes.
- By predicting these factors an Anaesthesiologist can anticipate the difficulty preoperatively and helps them in securing an airway.

JUSTIFICATION FOR STUDY:

- As majority of the previous studies were conducted in western population we would like to conduct this study in Indian population.
- Predicting these changes can help an anaesthesiologist anticipate the difficulty and provide safe care to patients.

METHODOLOGY:

- After obtaining approval from the INSTITUTIONAL HUMAN ETHICS COMMITTEE,

Pregnant women at 32-34 weeks of gestation coming to the Out patient department for antenatal checkup will be approached and recruited.

- **INCLUSION CRITERIA:**

1. ABOVE 21 YEARS
2. INDIAN POPULATION

- **EXCLUSION CRITERIA:**

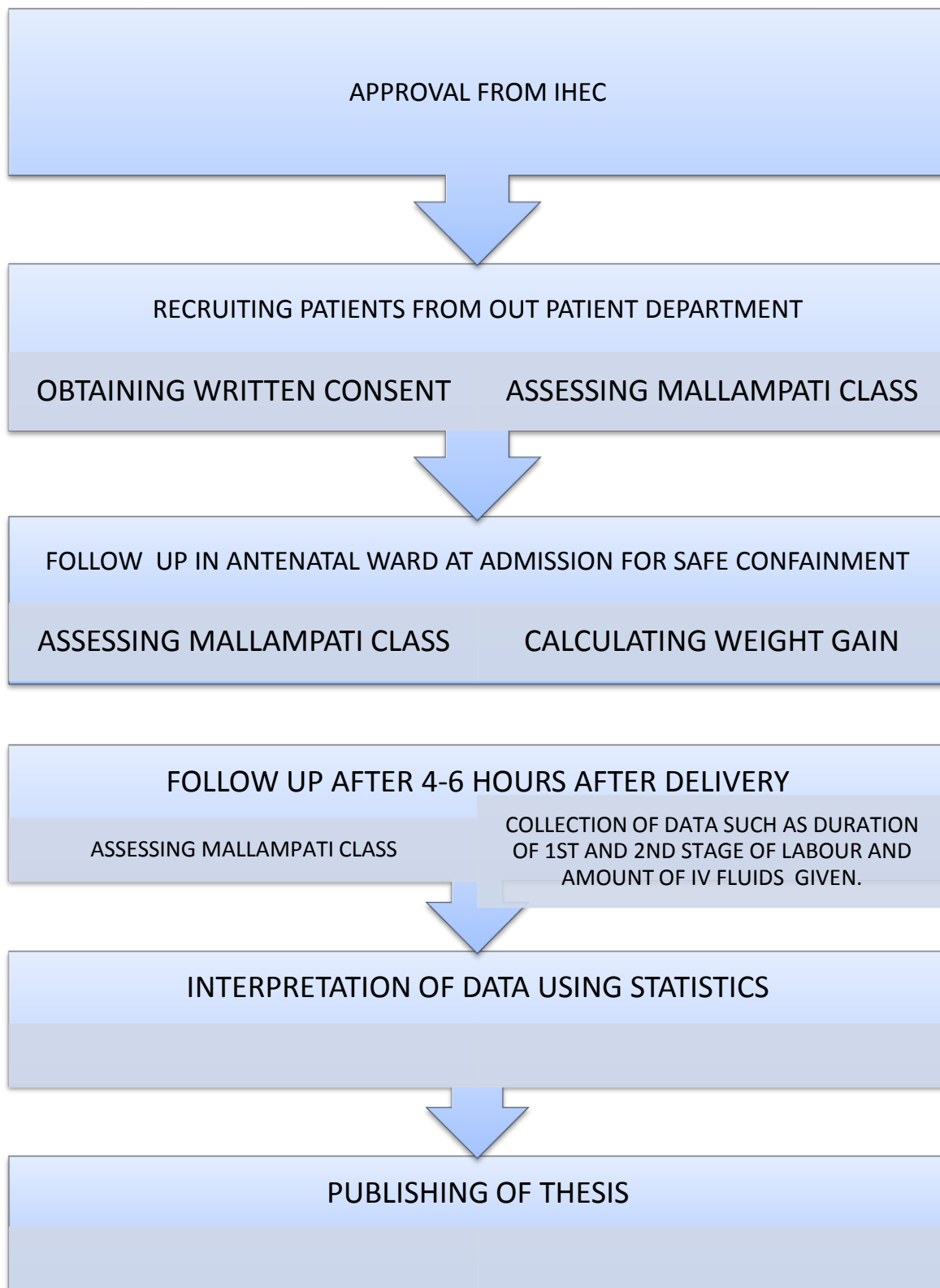
1. BELOW 21 YEARS
2. NON-INDIAN POPULATION.
3. PATIENTS WHO DENY CONSENT.
4. PATIENTS WHO SUFFER FROM ECLAMPSIA.

Each patient will be thoroughly explained about the study and an Informed written consent will be obtained from them.

- Their BMI will be calculated and their Mallampati class would be examined by asking them to open their mouth in sitting position and head in a neutral position and avoid phonation.
- Their contact information would be obtained and they will be requested to inform when they come for admission for safe confinement.
- Their Mallampati class will be assessed again during this admission and an increase in body weight would be noted.

- Again after 4-6 hrs after labour their Mallampati class will be assessed and data such as 1. Duration of 1st and 2nd stage of labour , 2. Amount of Intravenous fluids given during labour

will be collected from their case records.
- Again after 48-72 hrs after delivery their Mallampati class will be assessed in post natal ward.
- These patients are then divided into four groups based on the time of assessment:
 1. 32-34 weeks.
 2. Admission for safe confinement.
 3. 4-8 hours after delivery.
 4. 48-72 hours after delivery.
- The airway changes that is increase in Mallampati class are then compared among these groups and predictive factors are also studied.



POTENTIAL RISKS AND BENEFITS AND OUTCOME MEASURES:

- Risk is nil in this study as it does not interfere with treatment given to the patient and does not involve any drug administration or invasive procedure.
- Benefits in this study are for those patients for whom their airway difficulty can be predicted and they can be given safe anaesthesia care.

STATISTICAL ANALYSIS:

Sample size is calculated using the formula

$$n = \frac{z^2 \alpha^2 PQ}{L^2}$$

n=sample size

$z\alpha$ = 95% confidence interval

1.96 standard deviation

P= Population prevalence during previous studies= 37%.

Q= [100-P].

L= Allowable error (20%).

$$n = \frac{1.96^2 \times 37 \times [100-37]}{[\frac{20}{100} \times 37]^2}$$

n = 164.

Sample size of my study is 164.

NATIONAL IMPORTANCE:

As the previous studies have been conducted in western population, a study in predicting airway changes in pregnant women among Indian population is required for safe anaesthesia practice in our country.